

VTF 2006

VIA Technology Forum



*Embracing
Digital Intelligence*

Thin Enough:
Looking Into the Thin Client Future

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Agenda

- The Thin Client Market
- Advantages
- Thin Clients vs. PCs
- The Future
 - Market Forecast
- Challenges
- Opportunities
- Essential Guidance



Current Thin Client Market

- TR thin client applications
 - Call centers, form-based workers, task workers
 - Terminal replacements
 - Kiosks
- Primarily medium and large businesses
- Verticals
 - Banking, retail, healthcare, education

Thin Client Advantages: Security

- Security issues have become the primary issue for IT managers
 - Viruses, Trojans, Spyware, Adware, etc.
 - Data security/reliability
- Security costs are the fastest growing segment of IT costs between now and 2009
- The server-centered environment demanded by thin clients prevent most of these types of problems from occurring
 - Thin clients are significantly more secure than PCs
 - The architecture enforces IT best practices

Thin Client Advantages: Manageability

- Dedicated thin clients are also significantly easier to manage than PCs
 - Hardware thin clients can be upgraded en masse with a single click
 - Firmware updates for security releases, etc.
 - Serious problems simply require swapping out a new unit
- IT concentrates their management efforts on servers only
 - Apps upgraded on servers
 - E-mail filtering done at server
 - Backups done at server
- PC Management costs are typically several thousand dollars per machine per year

Thin Client Advantages: Return on Investment (ROI)

- Clients themselves cost less than PCs
 - Typically about half (\$300 vs. \$600)
- Thin clients feature significantly longer lifetimes than PCs
 - No moving parts
- Desktop support costs for thin clients are essentially zero
 - Significant savings
 - User-caused problems reduced to almost nothing

Thin Clients vs. PCs

- Thin Clients
 - No moving parts
 - Greatly increased reliability
 - Low purchase price
 - No user software
 - Not susceptible to viruses and other issues
 - Extremely low support costs
 - Lifetimes of 5 years+
 - Not well known, often misunderstood
- Desktop PCs
 - Several moving parts
 - HDDs
 - Fans
 - CD/DVD Drives and Drawers
 - Midrange purchase price
 - User software commonplace
 - Extremely vulnerable to viruses and other security issues
 - Tremendous support costs
 - Lifetimes of 3-4 years
 - Well known, well understood

Alternatives: Blade PCs

- **Full PC experience**
- **Several different methods**
 - Long distance KVM
 - Dedicated “server” for thin client
- **Confusion with blade servers**



Alternatives: Thin PCs

- **Full PC experience**
 - “Diskless” PC
- **Requires server-based booting**
- **Very limited success to date**



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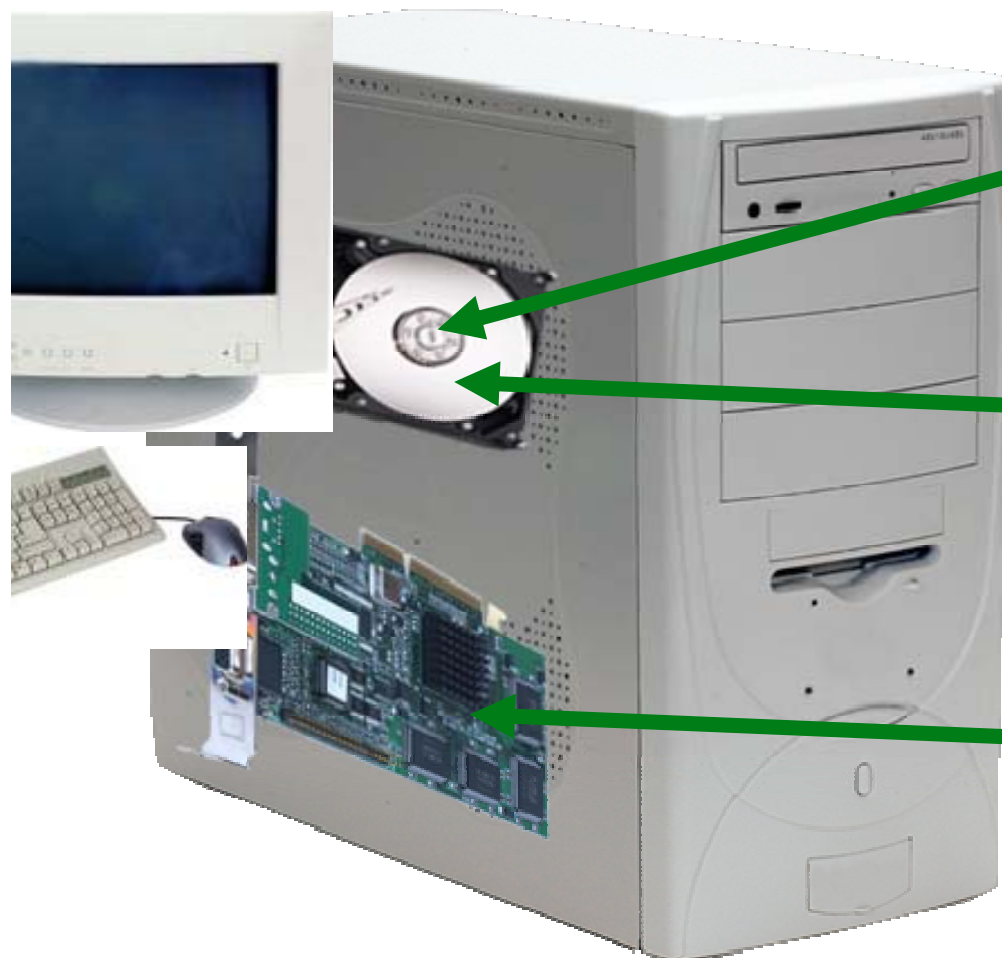
Alternatives: Software Solutions

- **Software-based alternatives**
 - Streaming OS
 - Streaming applications
 - Streaming complete desktop images
- **Can be used with full PCs, diskless PCs, or thin clients**
- **Network reliability is there**
 - Licensing confusion
- **Management tools are fragmented**

Comparing Alternatives

- **Choices overlap**
 - Will cause confusion
- **A question of ratios**
 - Servers to clients
- **None are good for mobility**

What's It Like Today?



Applications
& Data

Operating
system

Processing

Next?

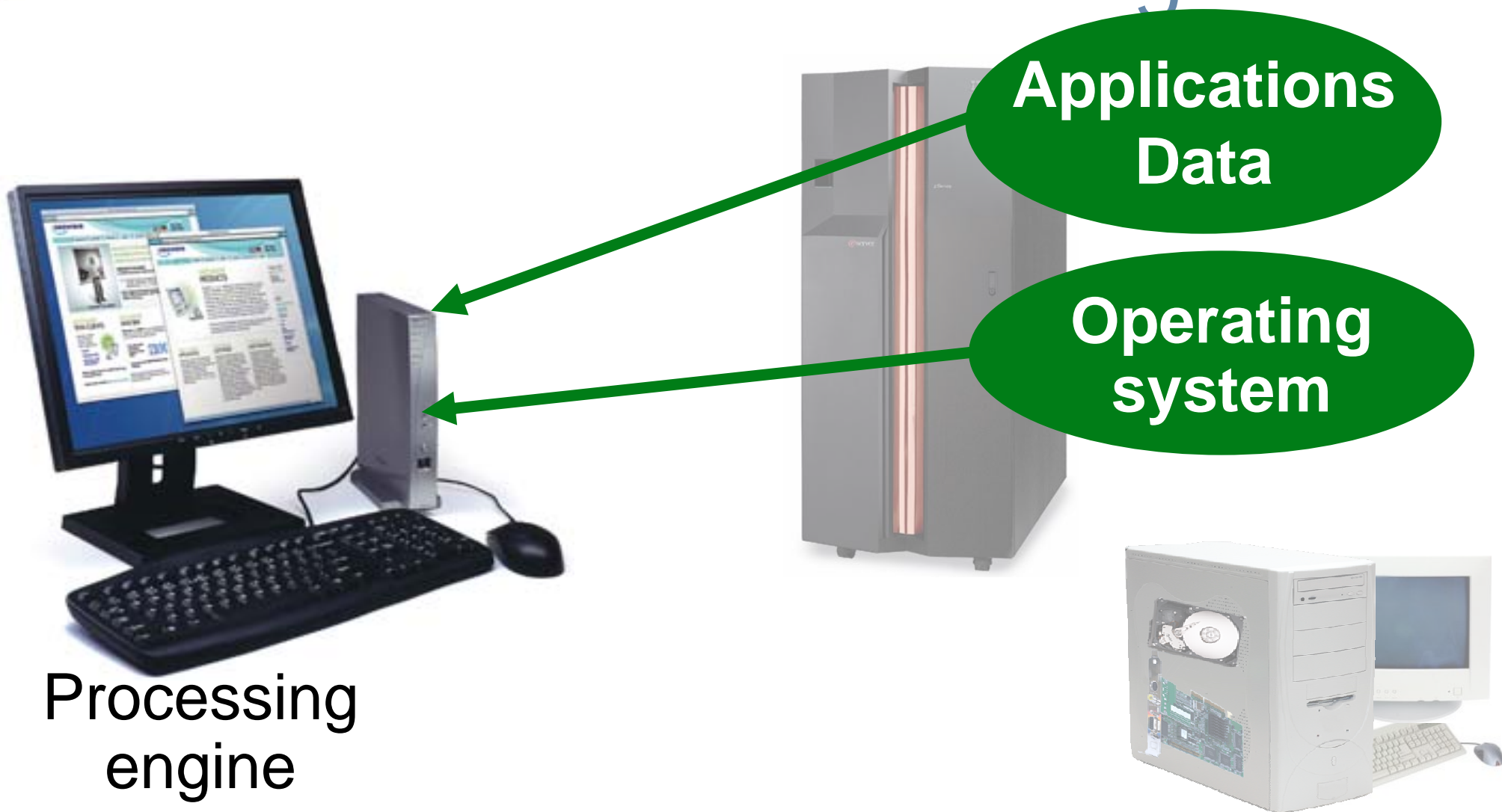
**Applications
Data**

**Processing
engine**

**Operating
system**



Where's the Processing Occur?

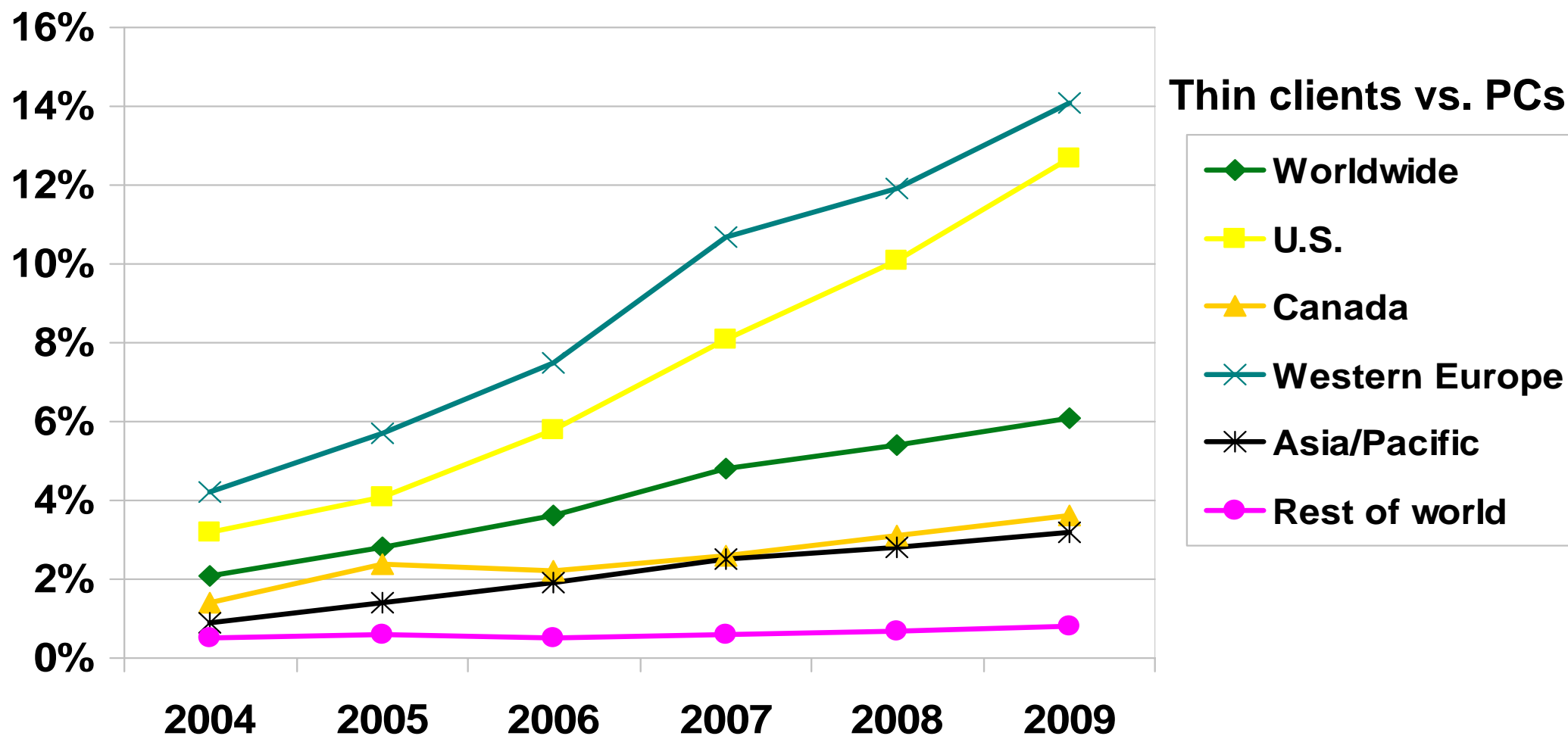


Thin Clients

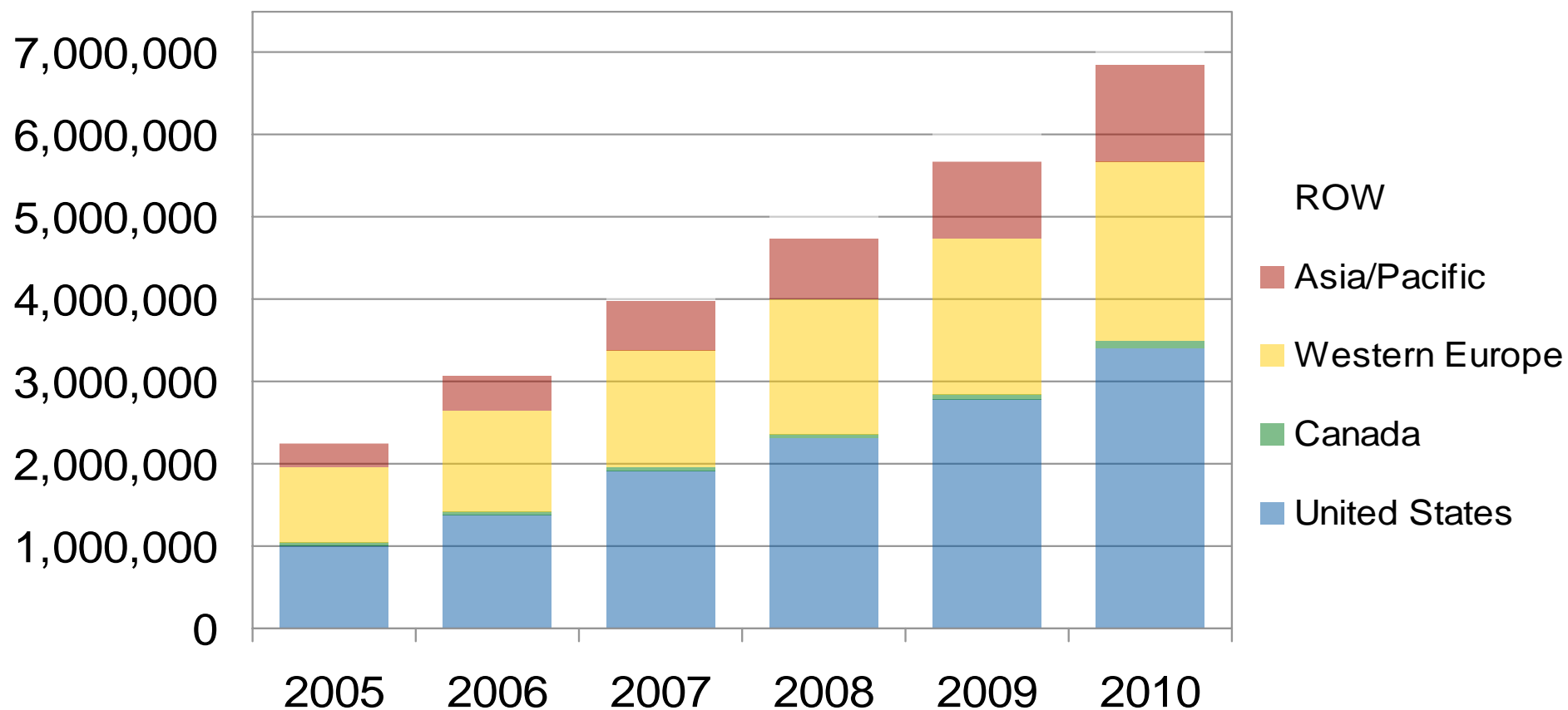
- **Not new, but growing nicely**
 - 23% CAGR through 2010
- **Well accepted in certain verticals**
- **Dominated by niche players**
- **Depends on screen updating protocols**
 - Limits performance
 - Limits application compatibility



Thin Clients Versus Enterprise Desktop PCs



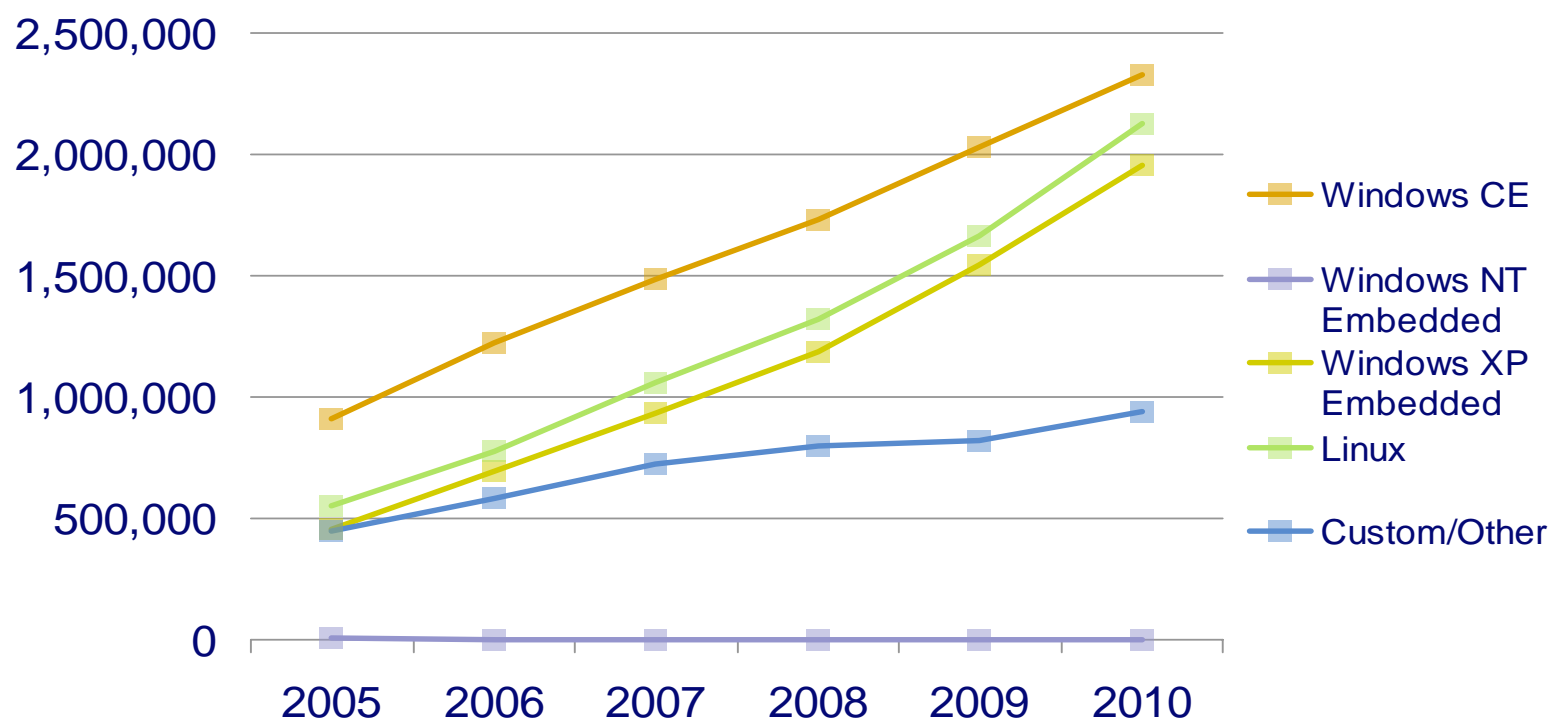
Worldwide Enterprise Thin Client Forecast



Source: IDC, 2006

Thin Clients by Operating System

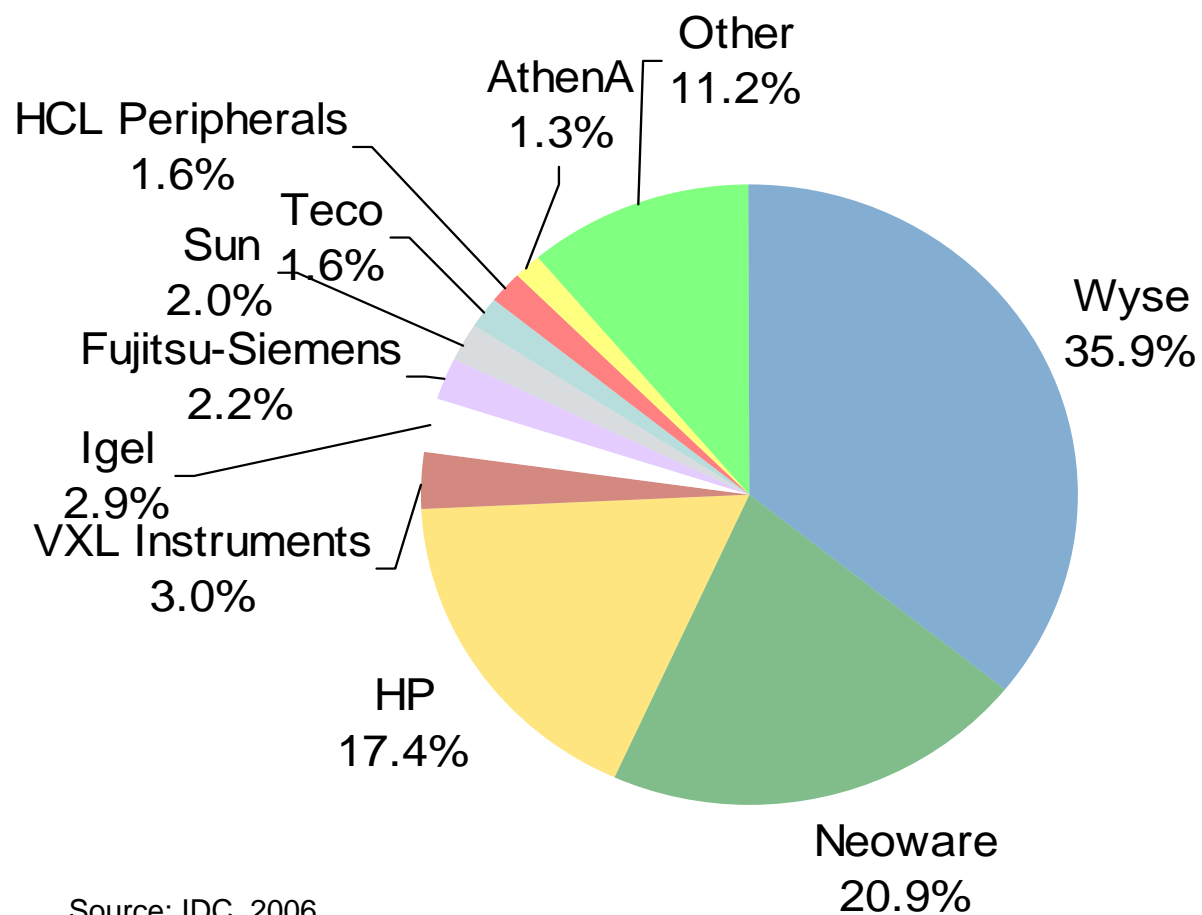
- Windows CE will be the primary OS choice
- Windows XP Embedded and Linux will battle for second place throughout the forecast



Source: IDC, 2006

Worldwide Thin Client Market Leaders

2005



Source: IDC, 2006

Thin Client Challenges

- Thin clients are an easy choice for companies and environments without existing PCs
 - Many thin client vendors are concentrating on developing economies, such as India, where PC penetration is low
- Transitioning from existing PC architectures is still a challenge
 - Long-term ROI clearly favors thin clients but....
 - ...many IT managers look only at immediate costs
- Thin client installations require upfront purchases of clients, servers and, in many cases, software licenses
 - Training costs for users and IT also a factor
- Vendors need to provide detailed cost analysis and roadmap for successful transitions

Thin Client Opportunities

- **Applications**

- Growth in self-service retail environments
- Work at home
- Computing as a utility
- Desktop PC replacements

- **Timing**

- PC replacement cycles
- Microsoft license renewals

Vertical Industry Growth

- Dedicated thin clients particularly well suited to certain industries and applications
 - Call centers across all industries
 - Verticals such as banking, retail, health care, education, hospitality and manufacturing

Essential Guidance

- Hardware thin clients offer a significantly more reliable and lower cost solution for many environments than PCs
 - They don't work everywhere, however
- Dedicated thin clients feature better security, manageability and ROI than PCs
- Software-based tools for providing thin client management to PC performance will be important, but initially hard to sell
- Vendors need to improve awareness of hardware thin client benefits to IT
 - Overall thin client awareness remains low
 - Even those who are aware have distorted view
- Thin clients continue to grow at a strong pace
 - Nearly 1 in 6 desktop client devices in advanced enterprise environments in 2009 will be thin clients

Questions?

Please email me at
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